

Date: Wednesday, 2/20/2008 4:23:40 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services

Drawing Name : 412 FLOAT SKIDTUBE

Job Number : 37545

Estimate Number : 11437

P.O. Number :

This Issue : 2/20/2008 S.O. No. :

Prsht Rev. : NC

First Issue : // Type : LANDING GEAR

Previous Run : 33476

Part Number : D3391015

Drawing Number : D3391 REV G

Project Number : N/A

Drawing Revision : G

Material :

Due Date : 3/15/2008 Qty: 1 Um: Each

Written By :

Checked & Approved By :

Comment :

est rev A 05.12.13 New issue EC

est rev B 06.02.09 Dwg @ revD EC

est rev C 07.03.13 dwg @ revF ec

est rev D 07.10.31 ecn 1053P EC

Est Rev:E ECN 1056 07-11-13 DD verified by: EG

Additional Product

Job Number:

SCRAP

Seq. #: Machine Or Operation: Description :

1.0

D6014090

ALUMINUM EXTRUSION

Comment: Qty.: 1.0000 f(s)/Unit Total: 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty Part Number Description Batch

1 D6014-090 Extrusion 32309

Identify as D3391-3

20 08/03/06

2.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE

Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599

Rev: AA & Dwg D3391 Rev: G

J.F. 08/03/09

3.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.F. 08/03/09

4.0

HAAS1

HAAS CNC VERTICAL MACHINING #1

Comment: HAAS

1-Machine as per Folio FA 599 Rev: AA & Dwg D3391 Rev: G

2-Deburr

J.L. 08/07/31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 2/20/2008 4:23:40 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 37545

Part Number: D3391015

Job Number:



Seq. #: Machine Or Operation: Description :

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.L 08/07/31

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

J.P 08/08/01

7.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

DP 8-8-5

8.0

BENDING

BENDING MACHINE



Comment: NC Bender

Form as per Dwg D3391

DP 8-8-5

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 08/08/05 (X)

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill Tube as per D3391 using DT8808 (ALL HOLES)

3-Drill and c' sink wearshoe holes as per Dwg D3391

4-C'sink holes for float bag (4 holes per side) as per Dwg D3391
Deburr

5- Tranfer holes from D3391-013 for electric step in tube

M 8-8-6

SCRAP

11.0

QC5

INSPECT WORK TO CURRENT STEP



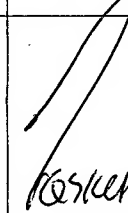

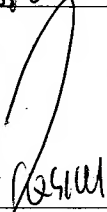
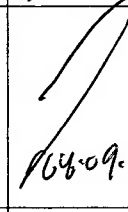
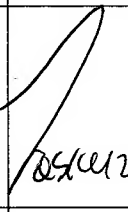
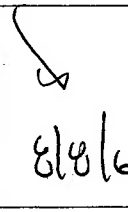


Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
8/8/6	# D3	Employee forgot to drill four wear plate holes. In doing this he ended up locating the drill sig for the 2 D3537-1 wear plate holes. He hole to be 7" off. (lower)		Scrap and destroy. no replace Qty (2)	H 7-9-9	 10/8/09-09	 10/8/09	 8/8/6
↓	↓	Supple) R.C. employee forgot to correct drilling sequence on how to drill the plate plate holes for the wear plates. Lack of Attention.		* ensure all Landing Gear employees are up to date on how to correctly fabricate Tri-Beam skid tubes.	H 7-9-9	 10/8/09-09	 10/8/09	 8/8/6

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 37545

Part Number: D3391015

Job Number:



Seq. #:	Machine Or Operation:	Description :
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12.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
------	-----------------	----------------------------



Comment: HAND FINISHING RESOURCE #1
Acid etch and Alodine as per QSI 005 4.1

13.0	D36704200	SPACER
------	-----------	--------



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)
SPACER
Batch: _____

14.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
------	----------------	-------------------------



Comment: LANDING GEAR RESOURCE 1
1-Install crossbolt spacers per dwg D3391
A/R Magnabond 6398 batch: _____
2- Grind flush

SCURD

15.0	QC5	INSPECT WORK TO CURRENT STEP
------	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

16.0	POWDER COATING	POWDER COATING
------	----------------	----------------



Comment: POWDER COATING
Powder Coat/White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

17.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
------	-----	---



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

18.0	D2646	Aft Cap
------	-------	---------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Aft Cap
Batch: _____

Dart Aero

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 2/20/2008 4:23:41 PM

User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 37545

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

D35371

WEARPAD



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPAD

Batch: _____

20.0

D35377

Wearpad



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearpad

Batch: _____

21.0

D35531

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

Batch: _____

22.0

D35533

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

Batch: _____

23.0

D36721

PHENOLIC WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PHENOLIC WASHER

Batch: _____

24.0

ALS41032130

Insert



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

INSERT

Batch: _____

or equivalent per

QSI 017

25.0

ALS41032225

Insert



Comment: Qty.: 12.0000 Each(s)/Unit Total : 12.0000 Each(s)

INSERT

Batch: _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes . No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 2/20/2008 4:23:41 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 37545

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

or equivalent
per QSI 017

26.0

ALS4428165

Inserts



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Inserts
Batch: _____

27.0

AN3C4A

BOLT



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)
Bolt
Batch: _____

28.0

AN3C5A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Bolt
Batch: _____

29.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
WASHER
Batch: _____

30.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-Install inserts per dwg D3391

2-Install Aft Cap as per Dwg D3391
A/R Sikaflex-241/-291 _____
Sikaflex expiry date: _____

31.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 2/20/2008 4:23:41 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 37545

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

33.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF 08-09-09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	37545
Description: Float Skidtube (412)		Part Number:	D3391-3
Inspection Dwg: D3391 Rev: G		Page 1 of 1	

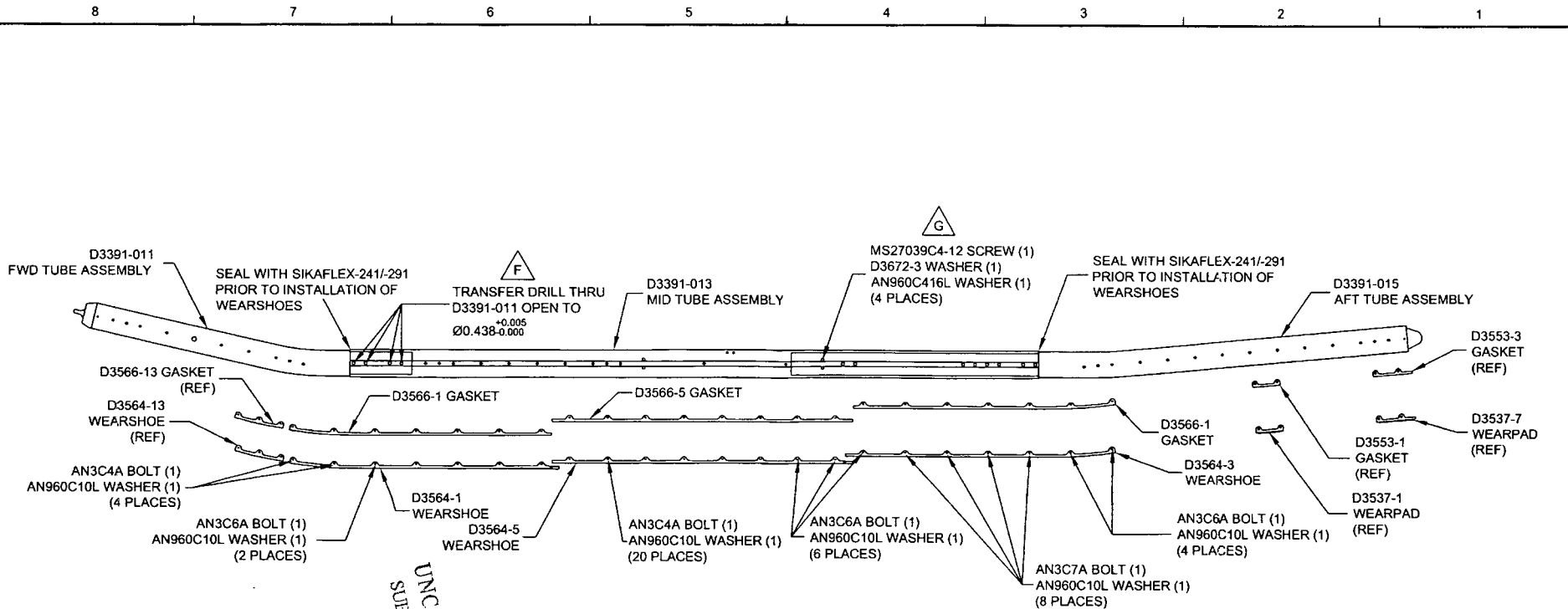
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
14.000	+/-0.010	14.000"	✓			
3.500	+/-0.010	3.500"	✓			
88.93	+/-0.030	88.930	✓			
44.995	+/-0.030	45.000	✓			
3.200	+/-0.010	3.201	✓			
1.526	+0.000/-0.030	1.517	✓			
0.200	+/-0.010	.200	✓			
7.500	+/-0.010	7.500	✓			
27.750	+/-0.010	27.750	✓			
31.750	+/-0.010	31.750	✓			
35.250	+/-0.010	35.250	✓			
3.300	+/-0.010	3.297	✓			
0.200	+/-0.010	.200	✓			
3.520	+/-0.010	3.525	✓			
0.687	+0.010/-0.000	.688	✓			
R0.062	+/-0.010	.062	✓			
Ø0.484	+0.005/-0.001	.486	✓			

Measured by: J.F./J.L.	Audited by: J.F.	Prototype Approval:	N/A
Date: 08/03/08	Date: 08/08/08	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	



D3391-041 ASSEMBLY

RELEASED
07-11-06

WORK ORDER
37545
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
RETURN TO
ENGINEERING
SHOP COPY

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

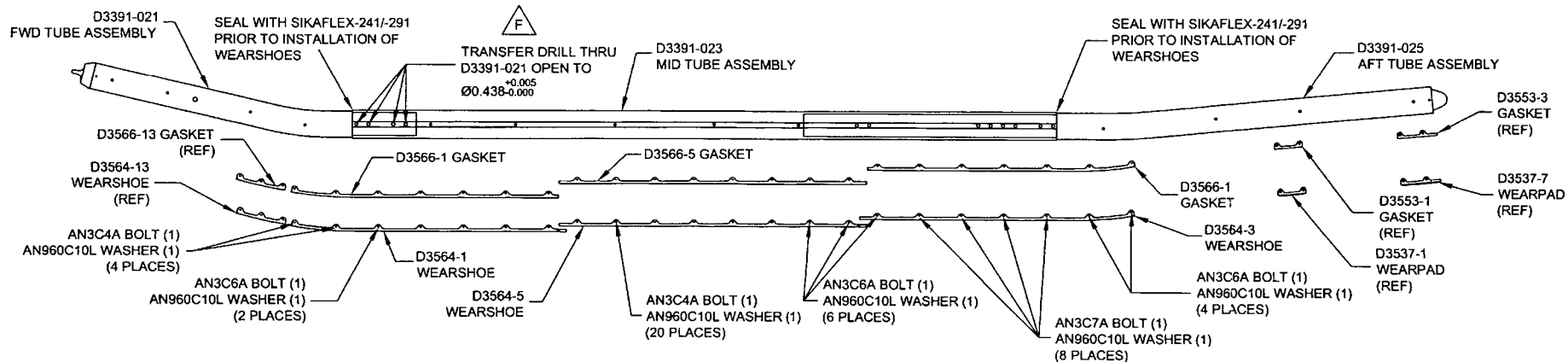
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWJ SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.07.31		

DART AEROSPACE USA, INC
PORT HADLOCK, WA

DRAWING NO. D3391
TITLE 412 FLOAT SKIDTUBE
SCALE NTS

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D3391-043 ASSEMBLY

RELEASED
07.11.94

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

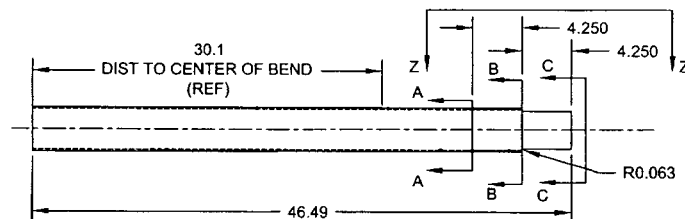
QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
6	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

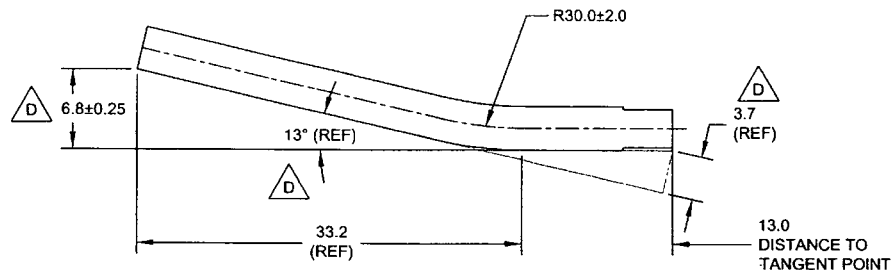
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

DESIGN	<i>PH</i>	DART AEROSPACE USA, INC
DRAWN	<i>JLC</i>	PORT HADLOCK, WA
CHECKED	<i>JS</i>	DRAWING NO. D3391
MFG. APPR.	<i>PH</i>	REV. G SHEET 2 OF 8
APPROVED	<i>PH</i>	TITLE 412 FLOAT SKIDTUBE
DE APPR.	<i>PH</i>	SCALE NTS
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC

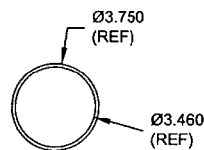
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WITHOUT NOTICE
WORK ORDER
10-375245



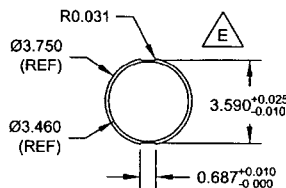
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



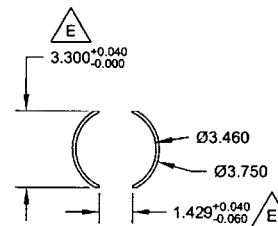
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



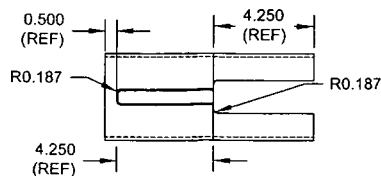
SECTION A-A
(SCALE 1:5)



SECTION B-B
(SCALE 1:5)



SECTION C-C
(SCALE 1:5)



VIEW Z-Z
(SCALE 1:5)

RELEASED
07-11-26 147

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 37545

DESIGN		DART AEROSPACE USA, INC
DRAWN	JHC	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391
MFG. APPR.		REV. G SHEET 3 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE
DE APPR.		SCALE 1:10
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC

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